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Italian adaptation of the Pemberton Happiness Index

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Happiness is a multi-faceted phenomenon in individuals' lives. It benefits our mental and physical health, social relations, employment, education, and environment. Pemberton Happiness Index (PHI) is a short and complete index covering general, hedonic, eudaimonic and social well-being. It considers the different timeframes of remembered and experienced well-being. The objective of the study is verifying if PHI, already validated in European and world countries is suitable for the Italian culture. The questionnaire was administered to 410 participants randomly divided into two groups to perform exploratory (EFA) and confirmatory (CFA) analyses, to examine Pearson's correlations with other scales, and to assess internal consistency (Cronbach α). Through EFA and CFA, aligning with the original validation, the best solution indicated a unidimensional structure composed of Remembered Well-being and the Experienced Well-being score. Pearson's correlations evinced strong positive correlations with psychological well-being and satisfaction with life and negative correlations with negative affect. PHI proves to be a concise and solid scale, suitable to the Italian culture. The strong positive correlations between PHI and life satisfaction and positive well-being confirm that individuals' evaluation of happiness is a crucial step and that in Italian culture well-being is strongly related to optimal functioning, both for individuals and for healthy working places.

keywords: happiness, well-being, assessment, Italian culture, adaptation.

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1 Introduction

In contemporary cultures, the ever-increasing attention to the individual leads to focus on well-being and happiness as the main aims of everyone's life (Layard, 2011). United Nations recently passed a resolution recognizing the pursuit of happiness as a fundamental human goal (Paiva et al., 2016). De facto, happiness has an intrinsic personal value together with secondary benefits that are equally important and socially and economically relevant (Huppert, 2010; Maccagnan et al., 2019).

Well-being has positive effects on the individual's physical and mental health (Keyes, 2002; Cohen, 2002; Furnham and Cheng, 1999) and hedonic tone has effects on creativity (Baas et al., 2008). Bekhet et al. (2008) prove that happiness tends to boost the immune system. Holder (2012) certify that positive subjective well-being can enhance children's success in school (Holder, 2012) and Jewell and Kambhampati (2015) notice that children's happiness can ease individuals' growth and influence future adults' life satisfaction.

On the other hand, secondary benefits are evident in the areas of health, social relations, employment, education and environment. In fact, happiness protects healthy populations from becoming ill (Veenhoven, 2008) and flourishing is associated to the survival of people and their longevity (Keyes, 2002). Highest levels of psycho-social functioning reduce sanitary costs, enhance the quality of relationships, and productivity and public safety (Keyes, 2007)). Happy and satisfied people are more likely to donate blood and money (Priller and Schupp, 2011) and to devote hours to voluntary activities (Griep et al., 2015). indeed, positive affect is strongly related to extraversion (Lucas et al., 2008); individual happiness and well-being are consistent with the reduction of accidents at work and absenteeism (Engel, 1977; Lyubomirsky et al., 2005); social functioning is associated with people longevity at work (Lyubomirsky et al., 2005); cognitive well-being in teachers has positive correlations with their positive functioning and teaching efficacy (Arslan, 2018). Finally, the pursuit of lasting happiness is depicted as the road that can lead to the development of a more productive, cohesive, caring and sustainable society (Huppert, 2010).

What mentioned here leads to two important and related matters: on the one side, it is crucial to have a comprehensive and clear model that can mirror individuals' real well-being as a whole and on the other side, this model/conceptualization needs to lead to a concise, complete, suitable and efficient type of assessment.

Considering the above-mentioned points and in order to live in a happy and productive society, understanding the role of happiness among workers is crucial for many areas of life. As argued by Tasnim (2016), workers spend half of their days in job-related activities. This emerges as a key point in the happiness and well-being evaluations, since the experimented happiness in the workplace could influence happiness in general. However, studies on happiness are fragmented and separated in many areas of interests. Organizational psychology is trying to understand happiness and its link with well-being through positive psychology (Csikszentmihalyi and Seligman, 2000), actually focused in understanding not psychological damages, but even ability and human potentiality. In this view, organizational studies are focusing on what can create positive organizational

behaviours (Luthans and Avolio, 2009; Fisher, 2010; Zito et al., 2019; Signore et al., 2019), in a positive dynamics activation of well-being and, thus, in healthy workplaces.

Identifying those constructs that describe happiness also in workplaces is not easy, first, because it is important to consider the characteristics of each profession, second, because several constructs are emerging and overlapping the dimension of happiness. As suggested by Fisher (2010), in fact, these dimensions could lie within three main levels: transient, personal and a unit one. The transient level refers to dimensions such as state job satisfaction, flow state, emotion and momentary mood during the working time, or state engagement, enjoyment or intrinsic motivation. The person level refers mainly to dispositional affect, affective organizational commitment and job satisfaction, vigour, typical mood at work and affective well-being at work. The unit level is more related to the group dimension and regards the collective job satisfaction, group task satisfaction, group mood and affective tone, and a unit-level engagement. To overcome this merging of constructs, happiness can be considered both as a hedonic and eudemonic experiences: if the first can be related to aspects linked to satisfaction, positive emotions and commitment; the second is related to growth, development and autonomy (Fisher, 2010) particularly in reaching goals that the subject feels as important and harmonious with his/her life, also by making use and even enhance the personal skills and abilities. The proposed instrument in this paper, considers this dimensionality and it is very important for the detection of the experience of happiness, a link to well-being, quality of working life and, therefore, to the possibility to build both psychological and physical healthy workplaces.

1.1 Unidimensional multi-faceted well-being

Psychological research about happiness has been dramatically increasing for the last 20 years thanks to the crucial evolution of the concept of health (Engel, 1977) and to the birth, at the turn of the new century, of Positive Psychology (Csikszentmihalyi and Seligman, 2000; Csikszentmihalyi, 2009). Health is thus intended as a state of physical, mental and social well-being and not just as absence of pathologies.

Positive Psychology, whose aim is «to understand, test, discover and promote the factors that allow individuals and communities to thrive» (Sheldon et al., 2000, p.2), is the discipline that actually emphasizes the importance of focusing on building and maintaining positive qualities rather than on repairing the worst things in life, and it ties the concept of health to well-being and happiness, thus identifying the positive contours of mental and physical health (Ryff and Singer, 1998).

By the way, happiness is an ambiguous term in that it conveys multiple meanings (Delle Fave et al., 2011), it is often conceived as a synonymous of life satisfaction. Paiva et al. (2016) state that happiness is generally intended as a positive emotional state that includes feelings of well-being and pleasure as well as a fulfilling satisfactory life. Aligning with Jongbloed and Andres (2015), in this study, we consider happiness as a more mental concept related to satisfaction with life (Diener et al., 1985), while well-being is considered as a conglomerate of many aspects of life and one's physical and mental health.

Researchers in positive psychology have investigated well-being through two main perspectives: hedonia and eudaimonia (Delle Fave et al., 2011). The former is conceptualized in subjective well-being and defined as a person's cognitive and affective evaluation of his or her life (Ed, 1984; Diener et al., 1999). It conveys an idea of happiness that includes experiencing pleasant emotions, low levels of negative moods and high life satisfaction (Diener et al., 2002, 2010). The latter is an ethic theory and develops the idea that happiness is a function of virtue and purpose in life (Kashdan et al., 2008; McMahon, 2006). It focuses on optimal psychological functioning (Ryff and Keyes, 1995) made of purpose in life, autonomy, relatedness, personal growth, environmental mastery, and self-acceptance.

Scholars put a lot of commitment in trying to figure out the reasons one kind of well-being should be considered hierarchically more important than the other (Waterman, 1993; Ryan and Deci, 2001). Only recently researchers begun to question the utility of such antagonism and urge for the necessity to consider the approaches as distinct but part of a comprehensive model (Kashdan et al., 2008; Keyes et al., 2002) and this was supported by a strong correlation between hedonic measures and eudaimonic experiences (Ryan and Huta, 2009; Waterman, 2008).

Furthermore, Keyes (1998) criticizes that «the leading conceptions of adult functioning portray well-being as a primarily private phenomenon» and affirms the relevance of social well-being in the conceptualization of mental health. Helliwell and Putnam (2004) confirm that marriage, family, ties with friends, workplace ties, civic engagement, trustworthiness and trust seem to be independently and robustly related to happiness and life satisfaction and Keyes (1998) confirms that as «individuals remain embedded in social structures and communities, and face countless social tasks and challenges», social well-being needs to be included in the picture. He actually hypothesized a multi-faceted model made of subjective, eudemonic and social dimensions and this multi-faceted conceptualization meets agreement in many contexts of research (Zambianchi, 2015; Boniwell, 2015; Hervás and Vázquez, 2013).

1.2 The relevance of the timeframe

Does the quality of everyday experiences influence people's feelings of well-being and satisfaction (Strack et al., 1985)? Does individuals' general well-being affect the way they experience positive and negative events in their own life? Some researchers demonstrated that there is a strong relationship between an individual's positive or negative experiences and his or her state of mental health. They discriminated between experienced well-being and a retrospective judgement of well-being. The former refers to momentary affective states and people's feelings in real time (Hervás and Vázquez, 2013). The latter refers to a retrospective judgement of well-being that is based upon people's memory and evaluation of their lives and goes under the names evaluated well-being (Kahneman and Riis, 2005), retrospective judgements of well-being (Oishi, 2002) or remembered well-being (Hervás and Vázquez, 2013). And when people are asked about their life satisfaction or happiness, they may use different heuristics and cognitive strategies to come to a conclusion (Hervás and Vázquez, 2013; Delle Fave et al., 2016).

The differences between experienced and remembered well-being are actually evident and need to be taken into account. In fact Kahneman and Riis (2005) criticize the dominant practice in well-being research that effectively ignores to distinguish them and insists that subjective evaluations are strongly influenced by emotional experiences. It is therefore mandatory to assess both types of well-being in order to have a clearer and more fitting description of well-being in Italian culture.

1.3 A complete and short measure of well-being

According to the considerations above, Pemberton Happiness Index (PHI) by Hervás and Vázquez (2013) is a suitable unidimensional multi-faceted assessment that includes different timeframes and considers the three areas of well-being, added of a general evaluation of well-being. The following is the composition:

1. Remembered well-being, the retrospective evaluation of well-being can cover 4 types of well-being:
 - General well-being (GWB), constituted of two items that investigate the general level of satisfaction and vitality of the interviewed; the two items are extracted from SWLS (Diener et al., 1985) and SHS (Lyubomirsky and Lepper, 1999);
 - Hedonic well-being (HWB), constituted of 2 items measuring the affective state of the interviewed by investigating positive and negative affects; the items are taken from PANAS (Watson et al., 1988);
 - Eudaimonic well-being (EWB), composed of 6 items investigating life meaning, self-acceptance, personal growth, relatedness, perceived control and autonomy; they are extracted from a short version of psychological well-being scale SPWB (Ryff, 1989; Ryff and Keyes, 1995);
 - Social well-being (SOCWB), made of 1 item measuring individuals' trust in society as a place in which they can express themselves and develop their potential (Hervás and Vázquez, 2013; Keyes, 1998) .
2. Experienced well-being, composed of 10 items investigating positive (POS) and negative (NEG) experiences that happened in the 24 hours preceding the compilation of the questionnaire; the items were elaborated by Hervás and Vázquez (2013) and inspired by Keyes' work (1998).

PHI is a unidimensional scale that is concise and yet includes the most relevant kinds of well-being in literature; it considers different timeframes. The scale was originally elaborated in a non-English language, the Spanish language, but the validation by the authors was made in English language, that is the version of the scale to which this adaptation actually referred.

Thus, the objective of the study is verifying if PHI, already validated in many European and world countries (Hervás and Vázquez, 2013; Paiva et al., 2016) is suitable

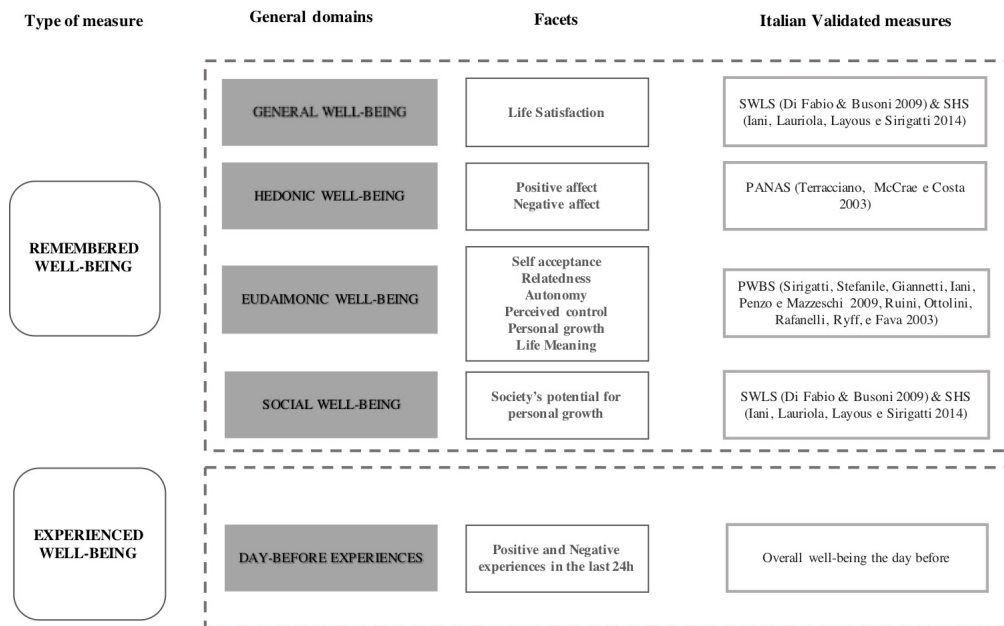


Figure 1: Components of Pemberton Happiness Index

for Italian culture. Due to all three characteristics of the index hereby mentioned, the authors expect to find a good adaptability of the index to the Italian culture. Moreover, in line with previous studies, this study detected possible correlations expected between PHI and other dimensions covering aspects of well-being, such as positive (even negative) affect, subjective happiness, psychological well-being, and satisfaction with life.

Considering the mentioned overlapping of construct defining happiness and well-being (Fisher, 2010), PHI would be useful and applied in organizational culture, also to detect, understand and explain the hedonic and eudemonic components of the perceived happiness of individuals, which can be responsible of the spillover effects (Bassi et al., 2013) and well-being in general.

2 Material and methods

2.1 Procedure

Before the administration of the Italian version of PHI, the scale passed a translation-back translation process (Jones et al., 2001), with the supervision of an English mother tongue. Therefore, the original version of PHI was translated from English to Italian, and then back-translated from Italian to English, in order to control and verify items conformity, resulting in satisfactory items' correspondence. Data were collected from participants who were invited to an online questionnaire, placed on a platform imple-

mented by researchers. They were directly invited via mail or social networks to access the link provided and fill in the online questionnaire. The composition of the sample was heterogeneous in terms of age, sex, socio-economic status, geographical Italian area and education level.

Before starting the questionnaire, participants received instructions to complete it, information on the voluntary nature of the participation in the study, and on the anonymity of their data. They were also informed of the non-commercial use of the data. There was no medical treatment or other procedures that could cause psychological or social discomfort to participants, and therefore, no additional ethical approval was necessary.

2.2 Participants

Participants in the study were 447, and after data cleaning – through which data from 37 participants were removed due to invalid responses (missing values or inconsistencies) – the final sample was created which was composed of 410 participants.

To perform the factor analyses steps, the participants were randomly divided into two subsamples. This random distribution of participants considered a minimum of 200 subjects in the SEM of the confirmatory models (Boomsma, 1985, 19987).

The first subsample, composed of 160 participants, was used for the exploratory factor analysis: 67.5% female, average age 42 years ($SD = 11.1$), mainly with medium-high education levels (61.3% university degree; 33.7% with high school diploma), 64.8% are married or cohabiting, and, coherently, 49.4% have children. Moreover, the geographical origin of respondents is mainly from North-East Italy (58.4%), followed by North-West (24.4%), South-Italy (13.6%), and Central-Italy (3.6%). Respondents in this sub-sample are mainly professional occupied (75.6%), employees (42.5%) with a full-time contract (65.6%). The professional sector of respondents is mainly industry (36.6%); business consultancy (15.4%), education and research (10.4%), private services (10.0%), public services (9.6%), health (8.3%); other (9.7% - sports, arts).

The second sub-sample, composing of 250 participants, was used for the exploratory factor analysis: 68.8% female, average age 43 years ($SD = 14.8$), mainly with medium-high education levels (45.2% university degree; 49.6% with high school diploma), 59.2% are married or cohabiting, and, again coherently, 58.4% have children. As for this sub-sample, the geographical origin of respondents is mainly from North-East Italy (40%), followed by North-West (34.4%), South-Italy (18.1%), and Central Italy (7.5%). Respondents in this sub-sample are mainly professional occupied (65.2%), employees (40.4%) with a full-time contract (56.8%). The professional sector of respondents is mainly industry (27.6%); business consultancy (20.1%), private services (13.8%), public services (11.9%), health (6.3%); education and research (6.2%), other (14.1% - sports, arts).

2.3 Validation measures

The questionnaire detected the following measures.

Pemberton Happiness Index (PHI) was measured using 21 items by Hervás and Vázquez (2013). In particular, the scale consists of 11 items related to remembered well-being, in

a 10-point Likert scale from 1 (fully disagree) to 10 (fully agree), and 10 items detecting the experienced well-being (five items for positive experiences and five items for negative experiences). As suggested by the original scale, the 10 items of experienced well-being were operationalized as dichotomous response options (yes/no) and then converted into a single score, also in line with the Portuguese adaptation of the PHI scale.

As the PHI is considered as a unidimensional construct composed of both the remembered and the experienced well-being, the experienced component would belong to the scale as a unique score together with the remembered well-being component. PHI score is calculated using the mean value of the scores of the 4 domains of remembered well-being (base 10) added of the 5th dimension of experienced well-being (the algebraic sum of values, of which each positive item is equal to 1, each negative item negation is equal to 1).

In the original study of PHI, the scale was originally addressed to adults, youths, and adolescents (age included between 16/18 and 65/75 years). PHI score in literature varies from 0 to 10 and its mean global value is 6.84 (Vázquez, 2014). Items translation and back-translation are shown in Table 1. Following the indications by Hervás and Vázquez (2013) and a previous study on the validation of the PHI scale in Portuguese language by Paiva et al. (2016), this study assessed scale validity and reliability considering the remembered well-being first, and then the combination of remembered and experienced well-being. The reliability coefficient (α) in this study is .87 for the remembered well-being and .87 for the remembered and experienced well-being.

Table 1: PHI, international validations (Hervás and Vázquez (2013) as a; Paiva et al. (2016) as b

Country	Sample	RWB	EXWB	RWB		RWB+EXWB
				11 items	11 + 1 items	
Germany (a)	375	6.55(2.00)	6.22(2.34)	α .93	α .93	
India (a)	393	7.23(1.61)	6.33(2.17)	α .89	α .89	
Japan (a)	378	4.92(1.66)	5.38(2.06)	α .92	α .93	
Mexico (a)	373	7.91(1.80)	7.42(2.20)	α .92	α .92	
Russia (a)	402	6.53(1.83)	6.38(2.05)	α .89	α .90	
Spain (a)	990	6.92(1.71)	6.66(2.17)	α .91	α .92	
Sweden (a)	385	6.76(1.97)	6.64(2.09)	α .92	α .92	
Turkey (a)	371	6.08(1.68)	5.50(2.66)	α .82	α .84	
USA (a)	385	6.93(1.95)	6.32(2.49)	α .93	α .93	
Brazil (b)	1035	7.01(1.93)	4.35(1.64)	α .91	α .89	

Positive and Negative Affect Schedule (PANAS) was measured using the Italian version of the scale developed by Terraciano et al. (2003) on a 5-point Likert scale from 1

(not at all) to 5 (completely). The scale is composed of 20 items – 10 positive items and 10 negative items. For the positive items, an example of item is: “(in general I feel...) excited” with a good reliability of .90. For the negative items, an example of item is: “(in general I feel...) distressed” α in this study .91.

Subjective Happiness Scale (SHS) was measured using the Italian adaptation of the scale developed by Iani et al. (2014). The scale is composed of 4 items, on a 7-point Likert scale from 1 (not at all (happy)) to 7 (completely/very (happy)). For example “Compared to most of my peers, I consider myself,” α in this study .79.

Psychological well-being (PWB) was measured using the Italian adaptation of the scale developed by Sirigatti et al. (2009) and Ruini et al. (2003). The scale is composed of 18 items on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). For example “For me, life has been a continuous process of learning, changing, and growth,” α in this study .82.

Satisfaction with life scale (SWLS) was measured using 5 items by Pavot and Diener (2008) on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). For example “In most ways my life is close to my ideal,” α in this study .89.

2.4 Data analysis

To assess the factorial structure of the Italian version of the Pemberton Happiness Index, data analyses followed two main stages: first an exploratory factor analysis (EFA) was performed on the first sample ($N = 160$) through SPSS 25; the second stage involved the second sample ($N = 250$) for the confirmatory factor analyses (CFA) conducted with Mplus 7. The model goodness of fit was tested considering the following indices: chi-square value (χ^2), Comparative Fit Index (Bentler, 1990, CFI), Tucker-Lewis Index (Tucker, 1973, TLI), Root Mean Square Error of Approximation (Steiger, 1990, RMSEA), and Standardized Root Mean Square Residual (Jöreskog and Sörbom, 1993, SRMR).

Moreover, in order to assess the validity of the scale and deepen the psychometric characteristics of the Italian version of PHI, the correlations (Pearson's r) between the Italian version of PHI and other constructs that literature highlighted to be correlated with the construct were examined (in both the samples used for the exploratory and the confirmatory factor analyses; $N = 410$). In fact, aligning with the original version of the scale (Hervás and Vázquez, 2013) and the Portuguese adaptation (Paiva et al., 2016), it is expected that PHI is positively correlated with other dimensions that should cover different aspects of well-being such as positive affect, subjective happiness, psychological well-being, and satisfaction with life. On the contrary, negative correlations are expected between PHI and negative affect.

Finally, in order to assess the internal consistencies of measures, Cronbach's alphas were calculated for the Italian version of PHI, and for each measure considered in the study.

Correlations, analyses of variance and Cronbach's alphas were performed with SPSS25.

Table 2: PHI, translation and revision after back-translation

n.	Pemberton Happiness Index	Indice Pemberton di felicità	Indice Pemberton di felicità Revised
1	I am very satisfied with my life	Sono molto soddisfatto della mia vita	Sono molto soddisfatto della mia vita
2	I have the energy to accomplish my daily tasks	Ho l'energia per svolgere tutti i miei doveri quotidiani	Ho l'energia per svolgere tutti i miei doveri quotidiani
3	I think my life is useful and worthwhile	Penso che la mia vita sia utile e meriti di essere vissuta	Penso che la mia vita sia utile e meriti di essere vissuta
4	I am satified with myself	Sono molto soddisfatto di me stesso	Sono molto soddisfatto di me stesso
5	My life is full of learning experiences and challenges that make me grow	La mia vita è piena di esperienze e sfide che mi fanno crescere	La mia vita è piena di esperienze e sfide che mi fanno crescere
6	I feel very connected to the people around me	Mi sento molto legato alle persone intorno a me	Mi sento molto legato alle persone intorno a me
7	I feel able to solve the majority of my daily problems	Mi sento in grado di risolvere la maggior parte dei miei problemi	Mi sento in grado di risolvere la maggior parte dei miei problemi
8	I think that I can be myself on the important things	Penso di poter essere in grado di essere me stesso nelle situazioni importanti	Penso di poter essere me stesso nelle situazioni importanti
9	I enjoy a lot of little things every day	Mi piacciono molto i piccoli eventi di ogni giorno	Mi piacciono molto i piccoli eventi di ogni giorno
10	I have a lot of bad moments in my daily life	Ci sono un sacco di brutti momenti nella mia vita quotidiana	Ci sono un sacco di brutti momenti nella mia vita quotidiana
11	I think that I live in a society that lets me fully realize my potential	Credo di vivere in una società che mi permetterà di realizzare il mio potenziale in maniera completa	Credo di vivere in una società che mi permetterà di realizzare il mio potenziale in maniera completa
12	Something I did made me proud	Qualcosa che ho fatto mi ha reso orgoglioso	Qualcosa che ho fatto mi ha reso orgoglioso
13	I did something fun with someone	Ho fatto qualcosa di divertente con qualcuno	Ho fatto qualcosa di divertente con qualcuno
14	I did something I really enjoy doing	Ho fatto qualcosa che mi è veramente piaciuto fare	Ho fatto qualcosa che mi è veramente piaciuto fare
15	I learned something interesting	Ho imparato qualcosa di interessante	Ho imparato qualcosa di interessante
16	I gave myself a treat	Mi sono dato un premio	Mi sono dato un premio
17	At times, I felt overwhelmed	A volte mi sento sopraffatto	A momenti mi sono sentito sopraffatto
18	I was bored for a lot of the time	Mi sono annoiato per molto tempo	Mi sono annoiato per molto tempo
19	I was worried about personal matters	Ero preoccupato per cose che mi riguardano	Ero preoccupato per cose che mi riguardano
20	Things happened that made me really angry	Sono successe delle cose che mi hanno fatto arrabbiare	Sono successe delle cose che mi hanno fatto arrabbiare
21	I felt disrespected by someone	Qualcuno mi ha mancato di rispetto	Qualcuno mi ha mancato di rispetto

3 Results

3.1 Exploratory factor analysis

In order to explore data, the exploratory factor analysis has been conducted through different solutions, using the maximum likelihood (ML) the extraction from the 21 items. Data were explored considering two possible compositions of the construct: first, considering only the remembered well-being element of the scale, and second considering the remembered together with the experienced well-being component of the PHI scale.

For both the solutions data were explored through eigenvalues > 1 with no number of factors extraction, and then the requirement of one and two factors with no rotation, with Varimax, with Oblimin, and with Promax rotation for each number of factors extraction. In line with theoretical bases and previous empirical findings, the best result was the one-factor solution with eigenvalues > 1 , as expected and in line with the original scale by Hervás and Vázquez (2013), and the validation of the PHI scale in Portuguese language by Paiva et al. (2016). This factorial solution resulted the best for both the solution that considered only the remembered well-being and the solution considering the remembered and the experienced well-being. This would confirm the importance of the evaluation of both elements, remembered and experienced, while detecting well-being.

Therefore, this paper would suggest to consider the dimension as a unique one, combining the remembered and the experienced side of well-being, which within this exploratory factor analysis resulted satisfactory.

The resulting unidimensional solution, therefore composed of the 11 items for the remembered well-being and the score of experienced well-being (by creating an unique index as suggested by the original study and the Portuguese adaptation, too), with satisfactory factor loading ranging between .33 and .84 (Table 3). Moreover, the Bartlett's Test of Sphericity is significant ($p < .000$), thus making the factor analysis possible, and the KMO is excellent (.91).

Although the solution with only the remembered well-being component showed good factor loading, ranging between .31 and .93, the unidimensional solution composed of the remembered and the experienced well-being was chosen, aligning with the original scale.

Finally, the factor solution absorbs 45.4% of the total variance and this is consistent with the original version of the PHI scale by Hervás and Vázquez (2013) that absorbed between the 41.13% and the 59.56% of the total variance within different samples, recommending the one-factor solution, even across countries.

3.2 Confirmatory factor analysis

The confirmatory factor analysis was performed on the second sample ($N = 250$) and tested with ML method the unidimensional model with one factor considering both remembered well-being and experienced well-being, as explored in the exploratory factor analysis together), and with two factors (remembered well-being and experienced well-being separately). Fit indices were very satisfactory as follows: $\chi^2 = 124.336$; $df = 54$; $\chi^2/df = 2.30$; CFI = .94; TLI = .92; RMSEA = .07; SRMR = .04. These indices confirm

Table 3: Exploratory factor analysis - Remembered + Experienced Well-being solution.
 N=160
 (Maximum likelihood - ML - extraction)

n.	Dimensions	Pemberton Happiness Index	Indice Pemberton di felicità	Factor loading
REMEMBERED WELL-BEING				
-	General well-being	I am very satisfied with my life	Sono molto soddisfatto della mia vita	.81
		I have the energy to accomplish my daily tasks	Ho l'energia per svolgere tutti i miei doveri quotidiani	.75
-	Eudaimonic Well-being			
	. Life meaning	I think my life is useful and worthwhile	Penso che la mia vita sia utile e meriti di essere vissuta	.71
	. Self-acceptance	I am satisfied with myself	Sono molto soddisfatto di me stesso	.84
	. Personal growth	My life is full of learning experiences and challenges that make me grow	La mia vita è piena di esperienze e sfide che mi fanno crescere	.72
	. Relatedness	I feel very connected to the people around me	Mi sento molto legato alle persone intorno a me	.52
	. Perceived control	I feel able to solve the majority of my daily problems	Mi sento in grado di risolvere la maggior parte dei miei problemi	.77
	. Autonomy	I think that I can be myself on the important things	Penso di poter essere me stesso nelle situazioni importanti	.57
-	Hedonic Well-being			
	. Positive affect	I enjoy a lot of little things every day	Mi piacciono molto i piccoli eventi di ogni giorno	.61
	. Negative affect	I have a lot of bad moments in my daily life	Ci sono un sacco di brutti momenti nella mia vita quotidiana	.33
-	Social Well-being	I think that I live in a society that lets me fully realize my potential	Credo di vivere in una società che mi permetterà di realizzare il mio potenziale in maniera completa	
EXPERIENCED WELL-BEING				.57
	. Positive experiences	Something I did made me proud	Qualcosa che ho fatto mi ha reso orgoglioso	
		I did something fun with someone	Ho fatto qualcosa di divertente con qualcuno	
		I did something I really enjoy doing	Ho fatto qualcosa che mi è veramente piaciuto fare	
		I learned something interesting	Ho imparato qualcosa di interessante	
		I gave myself a treat	Mi sono dato un premio	
	. Negative experiences	At times, I felt overwhelmed	A momenti mi sono sentito sopraffatto	
		I was bored for a lot of the time	Mi sono annoiato per molto tempo	
		I was worried about personal matters	Ero preoccupato per cose che mi riguardano	
		Things happened that made me really angry	Sono successe delle cose che mi hanno fatto arrabbiare	
		I felt disrespected by someone	Qualcuno mi ha mancato di rispetto	

the factorial structure and robustness of the model and, therefore, the one-dimensionality of the PHI scale. Deepening the model of the confirmatory factor analysis, all items load on the intended factor significantly at $p < .00$, and factors loading range between $-.36$ and $-.84$ (see Figure 2). It has to be noted that in both exploratory and confirmatory factor analyses, the “core” item resulted “Sono molto soddisfatto di me stesso” [I’m satisfied with myself] with the highest factor loading: $-.84$ in both analyses. This is in line with those studies suggesting that happiness can be a form of satisfaction (Walker, 2013).

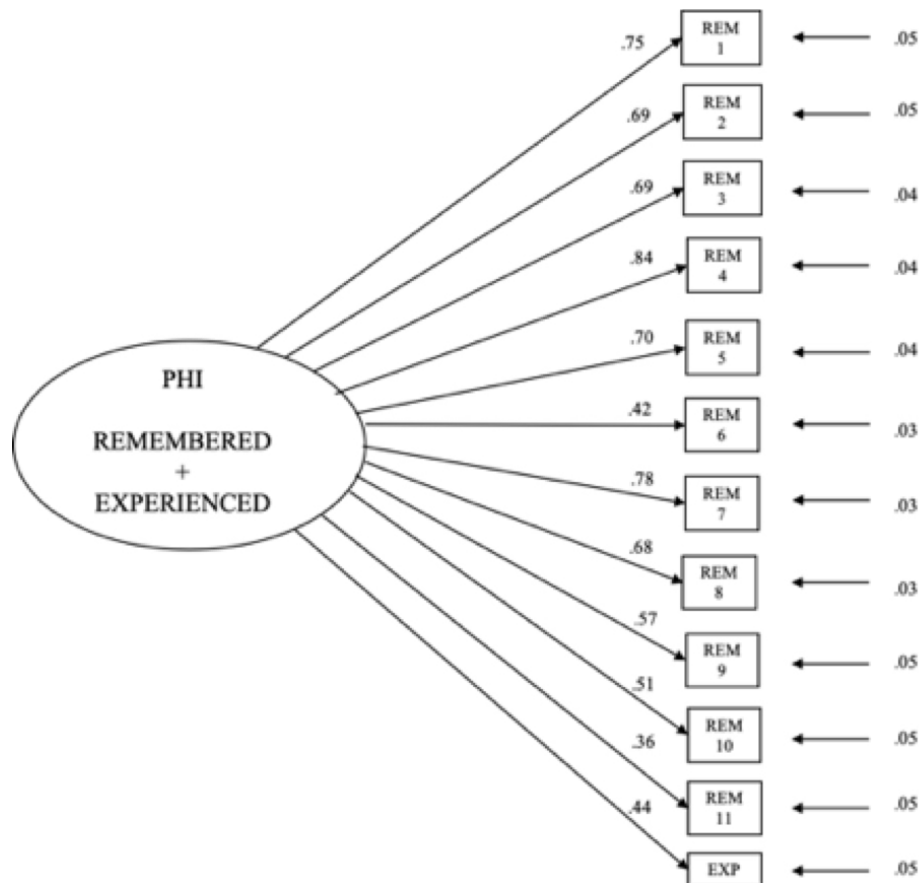


Figure 2: Results of the Confirmatory Factor Analysis (N = 250)

3.3 Validity

Results of correlations between the Italian version of the PHI Scale, as expected, showed satisfactory correlations with the variables that the literature indicates to be related with it. More in deep, all correlations are significant at the $p < .00$ level. As per Table 4, the Italian PHI scale is strongly and positively correlated with psychological well-

being ($r = .74$), satisfaction with life ($r = .72$), positive affect ($r = .63$), and subjective happiness ($r = .60$). On the contrary and coherently, the Italian PHI scale shows a negative correlation with negative affect ($r = -.39$).

Finally, each scale shows satisfactory Cronbach's alphas ranging from .79 and .91. Moreover, PHI mean score places over the mean point of the scale towards the higher part of the range and it occupies the same area as the global mean PHI score of other international studies (see Table 1) (Vazquez and Hervás, 2013).

Table 4: Means, Standard Deviations and Correlations (Pearson's r)

Note ** $p < .01$ level. Cronbach's alpha's on the diagonal (between brackets)

	M	SD	Range	1	2	3	4	5	6
1. PHI (REM + EXP)	7.44	1.02	1-10	(.87)					
2. PANAS POSITIVE	3.41	0.72	1-5	.63**	(.90)				
3. PANAS NEGATIVE	1.94	0.70	1-5	-.39**	-.24**	(.91)			
4. SHS	4.31	0.83	1-7	.60**	.51**	-.22**	(.79)		
5. PWB	4.37	0.64	1-6	.74**	.65**	-.39**	.52**	(.82)	
6. SWLS	4.68	1.27	1-7	.72**	.57**	-.32**	.56**	.70**	(.89)

The analyses of variance, did not show statistically significant differences considering the socio-demographic and professional variables.

4 Discussion

Prior work has documented the importance of considering well-being as a construct that measures both experienced and remembered well-being (Kahneman and Riis, 2005; Oishi, 2002; Hervás and Vázquez, 2013). PHI is a global and concise index measuring both kinds of well-being. As far as Italy is concerned, there is in literature an Italian adaptation of the PHI for students (Di Fabio, 2014a,b) proving, though for a specific portion of the Italian population, the reliability of the tool for both experienced and remembered well-being. Our study therefore confirms these previous results and confirms furtherly the adaptability of the scale.

Therefore, this study verifies, through psychometric evaluations, if the Italian version of the Pemberton Happiness Index, from the original scale by Hervás and Vázquez (2013), could contribute to the measurement of well-being also among this population.

The data analysed provide for three areas for discussion.

First of all, the best solution of the exploratory factor analysis confirmed the unidimensional structure of the PHI construct, reflecting the theory by Hervás and Vázquez (2013), also confirmed in the Portuguese validation by Paiva et al. (2016). In this step of analysis, good factorial solutions resulted for both the option considering only the remembered well-being, and the option considering the remembered and the experienced well-being. Aligning with Kahneman and Riis's 2005 words that all well-being assessments should consider individuals' affective states and feelings in real time on the one side, and a retrospective judgement of well-being on the other, we considered the solution

with the experienced and the remembered well-being. Thus, PHI's confirmatory factor analyses focused on this composition of the construct with satisfactory fit indices and factor loadings emphasizing the one-dimensionality of the construct and the diversity and relatedness of the remembered and experienced well-being, both contributing to the construction of the individual's well-being. The results allow to confirm the reliability of PHI in the Italian culture. This means that Italian people's well-being can be efficiently and effectively measured using this index. Therefore, this measure could contribute to the investigation of well-being also among this population.

Secondly, about scores and correlations between PHI and the other scales, it is possible to make two considerations. As already mentioned the PHI score mirrors the PHI global score (Vázquez, 2014). This similarity is generally true for other scales we measured as well (mean values of the Italian validated scales), proving again the coherence between the scales (Ruini et al., 2003; Sirigatti et al., 2009; Terraciano et al., 2003; Iani et al., 2014). In the second instance, PHI is strongly related to LS and PWB. It has to be noted, that the first item of the PHI scale is very similar to an item of SWLS ("I am very satisfied with my life"). This could contribute to the found strong relation, but no multicollinearity effects have been found. However, knowing that in literature life satisfaction is very broadly based, which means that possible individuals' changes in personality traits or in situational circumstances influence their judgement of life satisfaction (Pavot and Diener, 2008), we suppose that this measure is at the core of the individual's overall mental health and that PHI's strong correlation with it allows to expect that PHI is as much able to record such changes. Furthermore, the robust relation between PHI and PANAS POSITIVE and PWB confirms the stability of the Index, supporting Ruini et al. (2003) that positive emotions and PWB are to be considered as valid instruments to reveal well-being. The fact that the analyses of variance did not show significant results, could lie in other elements linked to personality or individual factors, as suggested by Hervás and Vázquez (2013) and, in line with authors, this point should be deepened. In particular, it could be useful to detect this aspect in relation to the organizational and job resources that workers can find available in order to understand possible job experiences linked to positive job experiences (Zito et al., 2019).

The third point is related to the fact that, as per Hervás and Vázquez's mention 2013, one of the assets of PHI is that it is one of the few scales in literature that was originally composed in a non-English language (Spanish latin language). Though the scale was validated in many languages and cultures, literature confirms that people can have different perceptions of their well-being according to the culture they pertain (Kahneman et al., 1999; Schimmack et al., 2002; Hervás and Vázquez, 2013) and that semantic areas in different languages can have different contours (Casas et al., 2012). PHI original language should probably add semantic adherence to the description, of the single items and of the phenomenon as a whole, when another latin culture like the Italian is taken into account. Certainly, the robust results of this validation can confirm the high adaptation of PHI to the Italian culture.

4.1 Limitations

Though the results are interesting, some limitations are worth noting. In the first place, as per Hervás and Vázquez's study (2013), we conducted the survey online. Though it was proved that web-based surveys give valid results as well as traditional surveys (Gosling et al., 2004), there can be some biases that were not investigated out yet, like the influence of technical problems (bad connections, questionnaire platform not working, etc.) in the compilation of the questionnaire, the quality of the visualization of the single questions that can possibly change from device to device changing thus the respondents' attitudes, or the ease of use linked to question filters or the mandatory survey completion (Hertel et al., 2017).

Another limitation is the use of a self-report questionnaire and a cross-sectional research design that does not permit to establish sure relations of causality between variables. In the future, diary and longitudinal studies may give a deeper understanding of the effect of the PHI construct on different domains of life such as satisfaction, general wellbeing, but also referring to variables linked to negative outcomes, such as exhaustion or psychosomatic disorders (Zito et al., 2015), as a protective strategy. Therefore, longitudinal studies can permit observation of the fluctuations of both positive and negative experiences and the extension of the research to other different domains. In this sense, the PHI scale could be useful to observe the development and dynamics of happiness across different contexts, situations or culture.

4.2 Future developments and practical implications

A great deal of work was already done in Italy about well-being. Yet, a great deal remains to be done and these findings about PHI set an important step in the assessment of well-being in the Italian language and culture.

PHI can actually be a starting point for policy makers, considering that happiness has benefits on the individuals but also co-benefits in health, environment, employment, education and other areas (Veenhoven, 2004). Policy makers have a key role to comprehend the potentially significant gains from happiness and pay attention to an appropriate allocation of resources in order to protect it or increase it. The allocation of resources, is a very important topic that has also to be considered in working places, since it can enhance positive experiences and dynamics, increasing also personal and professional growth and performance, with positive outcomes for both individuals and organizations (Zito et al., 2015, 2019; Ingusci et al., 2019; Fasanelli et al., 2017). In fact, promoting positive organizational cultures which endorse well-being and health (Wright, 2003; Ryff, 2016) is an important organizational goal. Moreover, it can develop positive psychological states that optimize human performance and allow the individual flourishing (Fullagar and Kelloway, 2012), that is a crucial element for both workers' well-being and healthy workplace.

Therefore, also organizational policies have to consider happiness and the positive outcomes linked to it. Among these, happiness is described to be the first cause of satisfaction at work (Tasnim, 2016) that is an indicator of psychological well-being.

Accordingly, as mentioned, happiness is related to the human performance and this depends on the level of engagement predicted by the level of happiness. Moreover, happiness in the workplace is associated to the perception of safety at work and the offered resources to manage stress, that is cause of low level of satisfaction and personal well-being (Tasnim, 2016; Fairbrother and Warn, 2003). In this view, detecting the level of happiness also among working places is functional to offer to employees' awareness of this important component of life, both from personal and organizational standpoints. Organizational policies oriented to health, should develop and diffuse well-being practice oriented to awareness, also considering the role of happiness, that can be a specific training topic. In general, it is important to prevent stressed and sick individuals, which can represent a public cost in terms of health interventions, and also an organizational cost in terms of absenteeism.

Therefore, having a measure of happiness, could be functional to achieve such important goals. Findings of the present study highlight that the Italian version of the PHI scale is a reliable measure, also considering the good psychometric characteristics and the evaluated validity of the scale. In this sense, the scale can be used in applied research to assess the happiness construct and it also represents a contribution to both the happiness construct that can be measured also among Italian population, and to the study on happiness in general, contributing to the scientific community. Moreover, this measure can be applied among working places to promote positive and organizational culture – even on a day-to-day basis (Xanthopoulou et al., 2012) – that focus on well-being and health. This is a very important point because it is functional to the development of positive psychological states optimizing human performances and individual flourishing (Fullagar and Kelloway, 2012), that is a crucial element for both workers' well-being and an healthy workplace.

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